Capstone Project

The Battle of the Neighborhoods

Applied Data Science Capstone by IBM/Coursera

Fatma Ben Dhieb

Introduction

This project is about electing the best place for a restaurant in Paris. Due to the density of population in Paris, there is a lot of restaurants cafe and bistro everywhere. This project is of interest to the restaurant owners or future owners. It gives a good idea of the cost of neighborhood and their most common venues. This is important because if you choose for example to open a fast food place it would be better located near a university or offices however if it is a fine cuisine restaurant so better go with residential neighborhood or a fashion/shopping street.

Data

Foursquare was used to locate metro stations, cafes, bistros and restaurants. afterwards used to investigate the surrounding of the final two places selected (shops, schools, office, galleries…) in order to understand what type of people(workers, shoppers, kids, teenagers..) are mostly there.
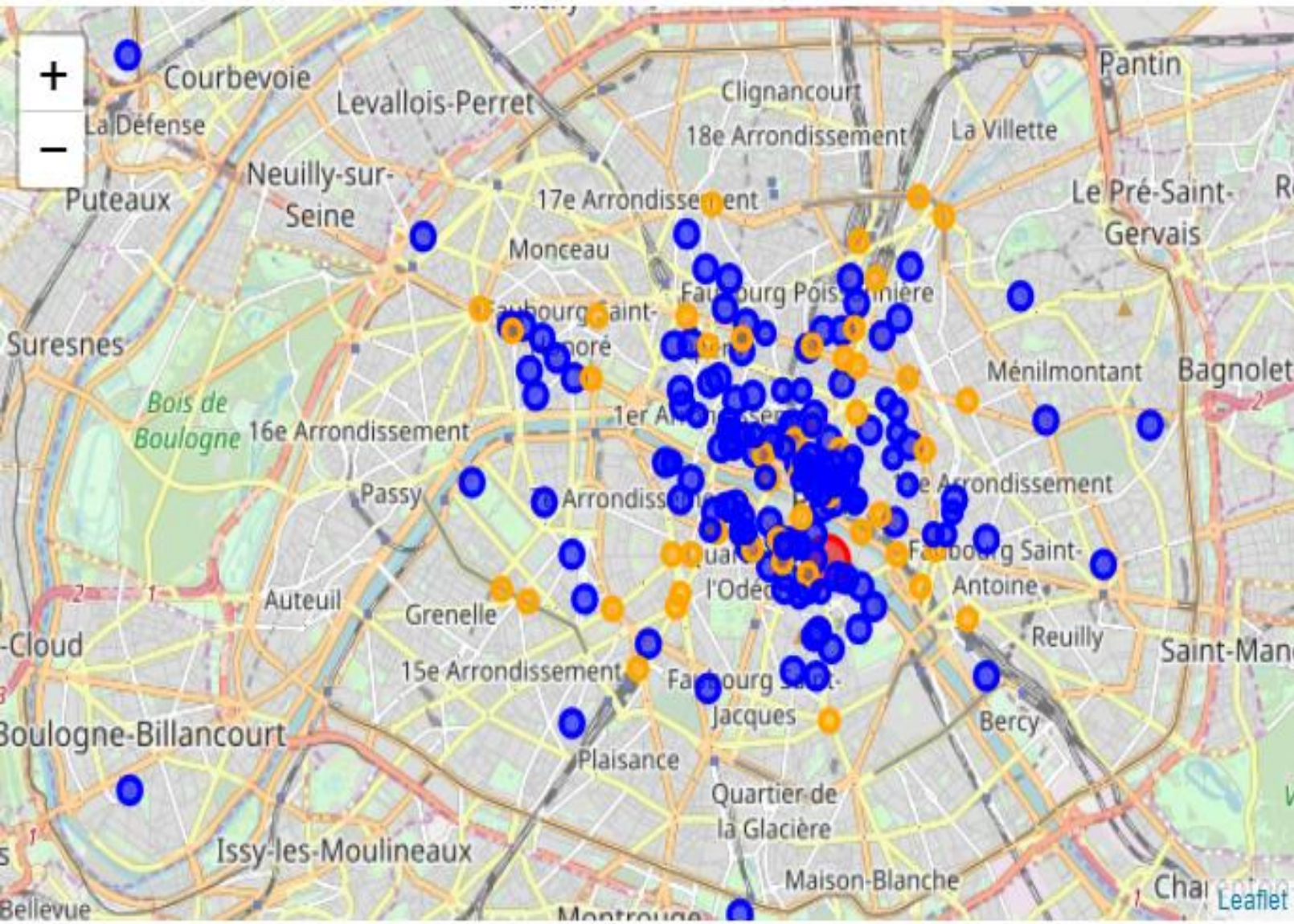
To have the name of neighborhoods:

https://www.worldpostalcodes.org/en/france/arrondissement/map-of-postal-codes-in-paris

The price per meter square for the neighborhoods:

https://edito.seloger.com/actualites/barometre-lpi-seloger/paris-quel-prix-immobilier-dans-votre-arrondissement-article-31984.html,
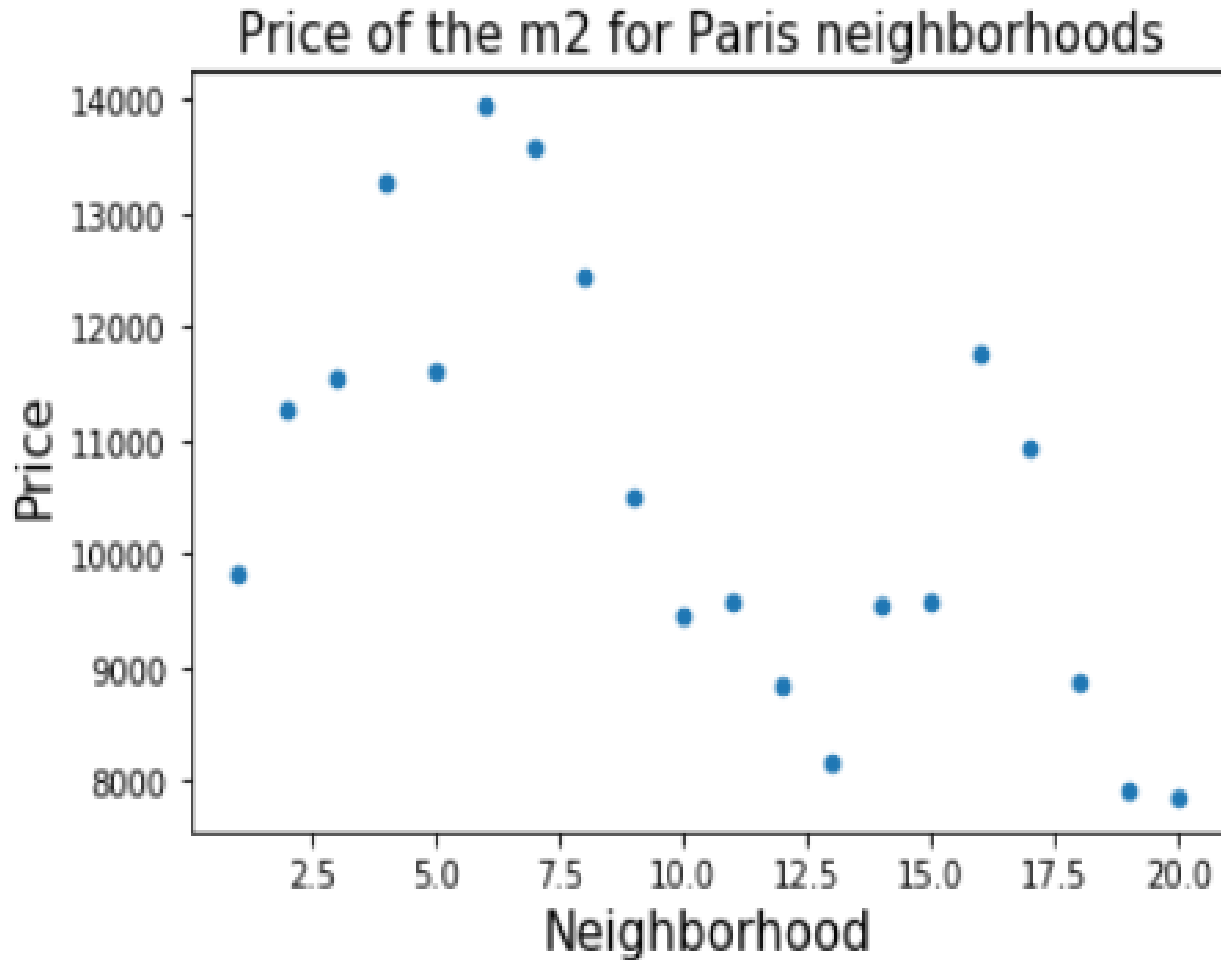
Methodology

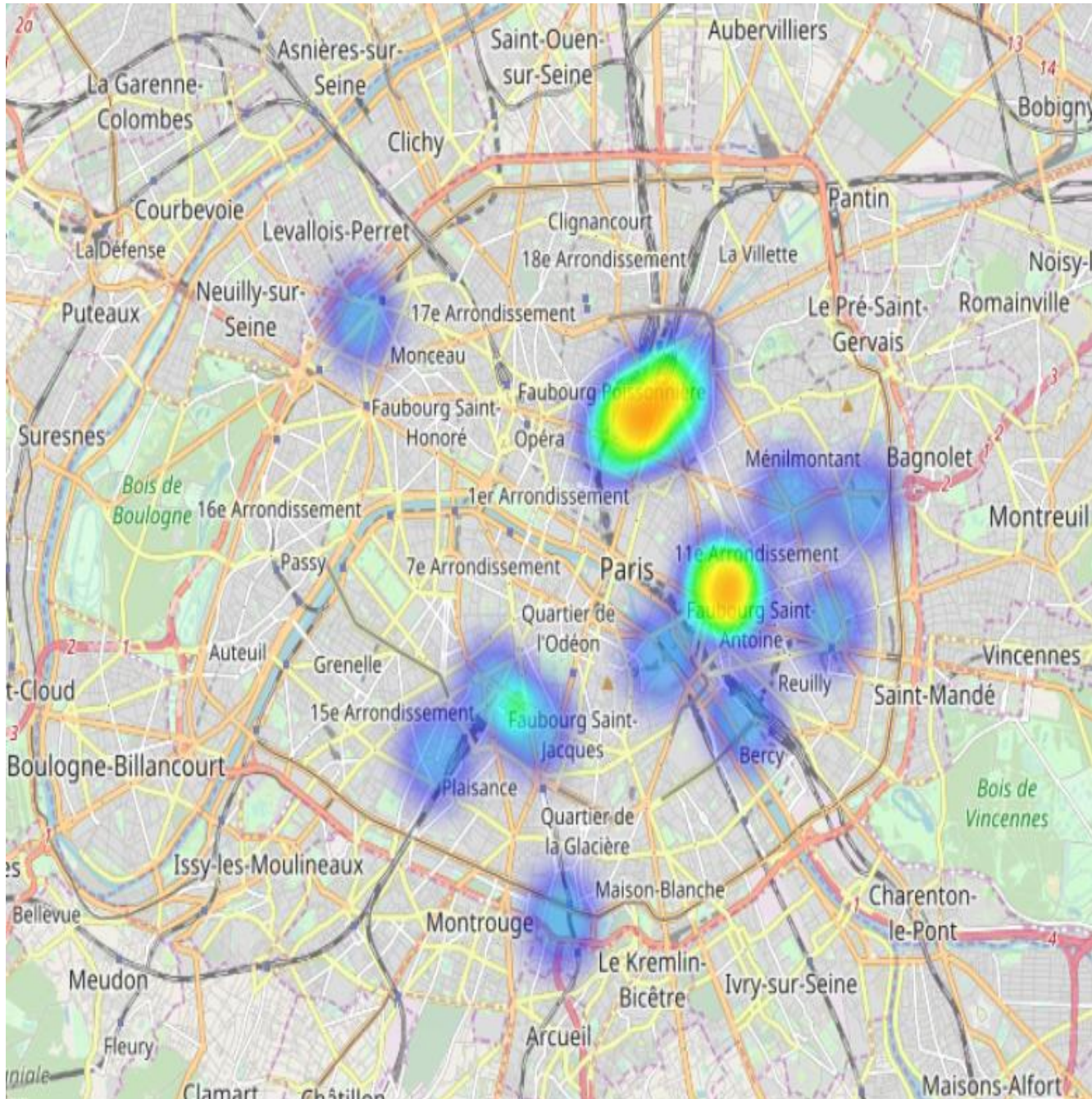With Foursquare, search bistro, café, restaurants and metro stations.

Metro station: orange

Others: blue

Price per m² for the 20 neighborhoods

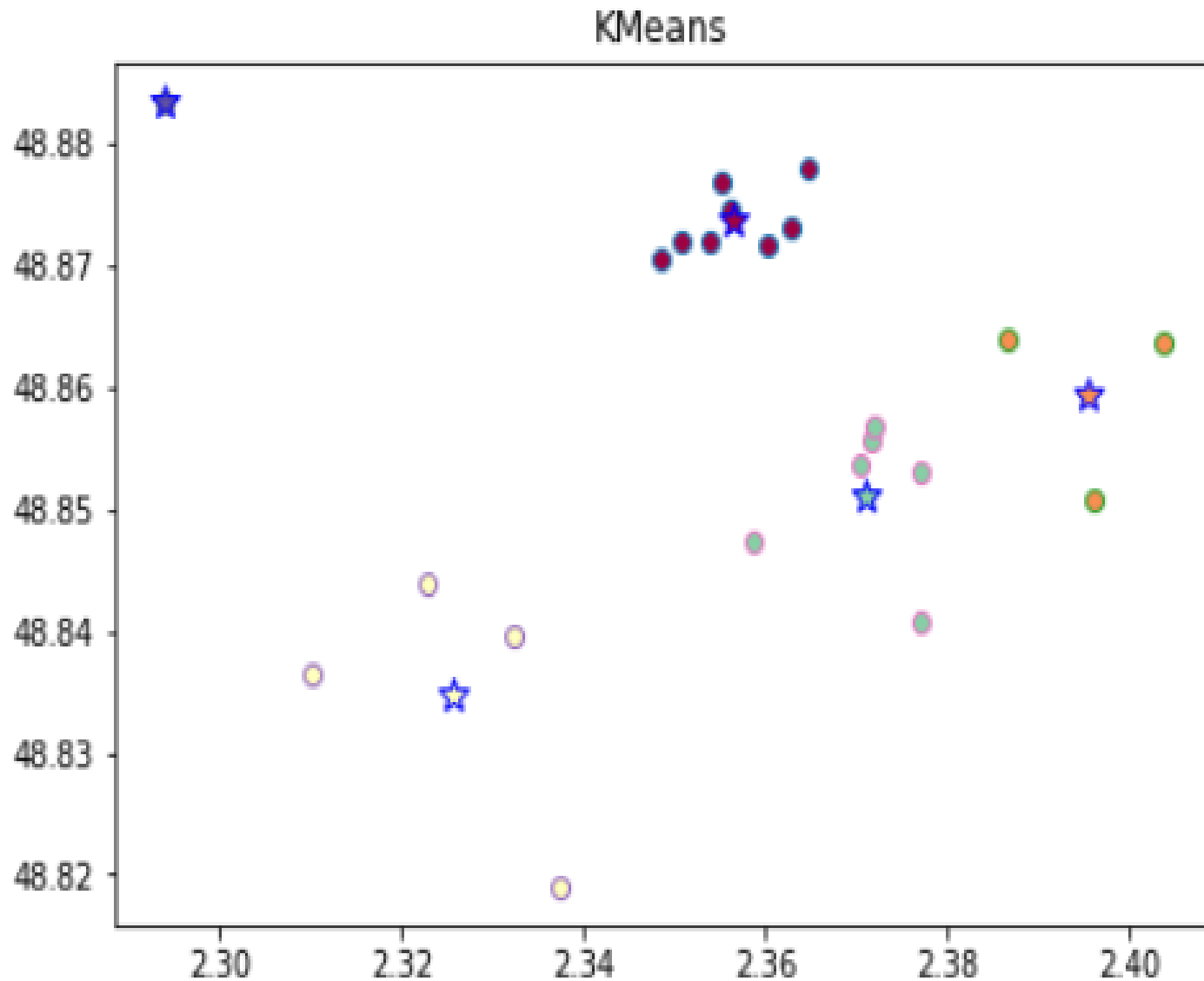Price of the m2 for Paris neighborhoods

The prices for the 20 neighborhoods are gathered in this graph. The following neighborhoods were selected as a probable location: 10, 11, 12, 13, 14, 15, 18, 19, 20. However, the 13, 18 and 19 don't have many restaurants and café meaning that they are more residential neighborhoods. So the choice will be between 10,11,12,14,15 and 20.

The following map shows the locations of the bistros, café and restaurant in the selected areas. it gives a better idea of the density of food places in these neighborhoods. It shows four clusters with a different density of venues

Since one of the clusters is bigger, it was considered as two clusters. To better select the coordinates kmeans clustering was used and the number of clusters was set to 5.

Results and Discussion

Among these clusters, one has a high density of food places (purple), one is empty(blue), which leaves the choice between 3 locations.

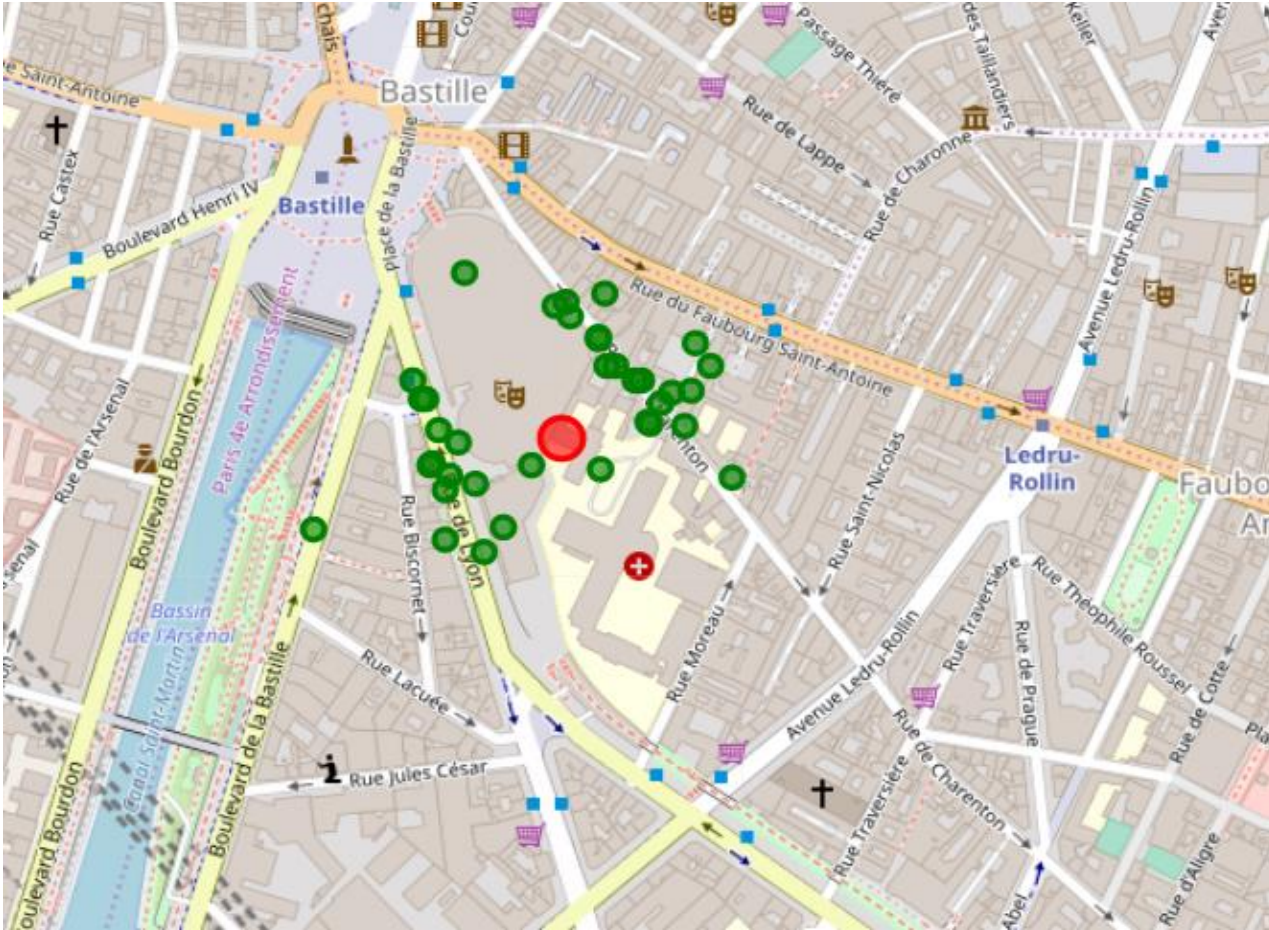2.39552425,48.85947888

2.32563621,48.83474781

2.37124654, 48.85119842

The second location has mainly a cemetery, a memorial site and a tech startup which lead to its discard. At last, two locations were selected one near la Bastille which is number 3 and one near place de La Nation. With foursquare, the categories of commerce surrounding the place were explored in order to select the optimal location.

La Bastille

Place de la Nation

La Bastille has a historic symbolic since it was where stood the prison of la bastille before its desruction.it is now a touristic site with the July column on its centre and many concerts and events take place there. It has also a well known nigh life with is night clubs, bars and restaurants. Place de la Nation is known for having once had one of the most famous guillotines during french revolution. Nowadays it is the starting point of many Parisian demonstrations.

Common venues near la Bastille

	postalCode	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue
0	75004	Wine Shop	Hotel	Art Gallery	Asian Restaurant	Bar	Brasserie	Burger Joint	Conference Room
1	75006	Jewelry Store	Wine Shop	Hotel	Art Gallery	Asian Restaurant	Bar	Brasserie	Burger Joint
2	75011	Tech Startup	Wine Shop	Hotel	Art Gallery	Asian Restaurant	Bar	Brasserie	Burger Joint
3	75012	Hotel	Italian Restaurant	Mediterranean Restaurant	General Entertainment	Brasserie	Health & Beauty Service	Hobby Shop	Bar
4	75017	Animal Shelter	Hotel	Art Gallery	Asian Restaurant	Bar	Brasserie	Burger Joint	Conference Room
5	94340	Burger Joint	Wine Shop	Hotel	Art Gallery	Asian Restaurant	Bar	Brasserie	Conference Room

Both locations are close to many metro stations. To compare the surroundings, kmeans clustering was used to have a list of most common venues, Table1 and 2. It appears that la Bastille has more attractive venues, more suited for the surrounding of a restaurant. It has also many hotels which makes tourists potential customers in addition to the locals.

Common venues near place de la Nation

location.postalCode	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue
0	75011	Flower Shop	Doctor's Office	Hotel	Miscellaneous Shop	Office	Dentist's Office	Pharmacy	Building
1	75012	Café	Wine Shop	Dive Bar	Coworking Space	Dance Studio	Dentist's Office	Department Store	Diner
2	75020	Optical Shop	Doctor's Office	Furniture / Home Store	Chinese Restaurant	Paper / Office Supplies Store	Japanese Restaurant	Clothing Store	Hotel

Close to la Bastille, seems to be a more attractive place for a restaurant. Concerning the speciality, it can be French since it is s a touristic place and tourists like to try local cuisine.

Close to la Bastille, seems to be a more suited place

La Bastille (Source: https://www.paris.fr/pages/bientot-une-nouvelle-place-de-la-bastille-6093)

Conclusion

As a conclusion, near la Bastille seems an affordable and convenient spot for a restaurant due to its proximity to metro station and the density of commerce around. Foursquare was helpful to reach this result but other sources were also needed. The speciality of this restaurant can be chosen according to the population of the neighborhood. A french restaurant, bistro of café is also a good idea due to the number of hotels nearby.